

**IN THE CLAIMS**

Please amend the claims as follows:

1. (currently amended) A method for presenting multisequence data representation by a computer system, the method comprising the steps of:

identifying replets by the computer system, for sequence data in a memory accessible by the computer system, wherein the replets that represent respective parts of said sequence data;

storing in a memory accessible by the computer system; for each replet, at least one position-match entry that records the a respective at least one data positions of the replet within the sequence data; information over which the identified replet matches the sequence information;

determining generating a backbone data sequence, wherein generating the backbone data sequence includes the computer system removing the replets from the sequence data; information for which no replet match is identified; and

representing presenting the multisequence data as the backbone data sequence in combination with the position-match entries.

2. (currently amended) The method as claimed in claim 1, further comprising the steps of:

associating ones of the replets with subsequences of the data sequence; and

storing portions of the subsequences as data variations portions, wherein the data variation portions of the subsequences differ from their respectively between said identified replets, and said related sequence data.

3. (currently amended) The method as claimed in claim 2, wherein the step of storing data variations is performed using indirection.

4. (currently amended) The method as claimed in claim 1, further comprising the step of:

identifying, among said identified replets, meta-replets that can be used to represent multiple replets.

5. (currently amended) The method as claimed in claim 4, further comprising the step of:

segmenting meta-replets into multiple parts to account for location-specific variations of the meta-replets in sequence data.

6. (currently amended) The method as claimed in claim 1, further comprising the step of:

storing replet information in a replet-information table using indirection so that equivalent sequences occupy single storage space.

7. (currently amended) The method as claimed in claim 1, further comprising the step of:

identifying subsequences of the sequence data able to be represented by one or more different replets.

8. (currently amended) The method as claimed in claim 7, further comprising the step of:

storing only one of said replets able represent the identified subsequences.

9. (currently amended) The method as claimed in claim 1, further comprising the step of:

identifying patterns common to the identified replets.

10. (currently amended) The method as claimed in claim 1, further comprising the step of:

storing multiple views of the sequence data at multiple levels of abstraction.

11. (currently amended) The method as claimed in claim 1, further comprising the step of:

storing annotation information for sequence data with corresponding position-match entries.

12. (currently amended) Computer software, recorded on a medium, for multisequence data representation, the computer software comprising: A computer program product, stored on a computer readable medium, the computer program product having instructions for execution by a computer, wherein the instructions, when executed by the computer, cause the computer to implement a method comprising the steps of:

software code means for identifying replets, for sequence data in a memory accessible by the computer system, wherein the replets that represent respective parts of said sequence data;

software code means for storing in a memory accessible by the computer system, for each replet, at least one a-position-match entry that records the a respective at least one data positions of the replet within the sequence data, information over which the identified replet matches the sequence information;

software code means for determining generating a backbone data sequence, wherein generating the backbone data sequence includes removing the replets from the sequence data, information for which no replet match is identified; and

software code means for representing presenting the multisequence data as the backbone sequence data in combination with the position-match entries.

13. (currently amended) A computer system for multisequence data representation, the computer system comprising: A computer system comprising:

a processor; and

a storage device connected to the processor, wherein the storage device has stored thereon a program for controlling the processor, and wherein the processor is operative with the program to execute the program for performing the steps of:

means for identifying replets; for sequence data in a memory accessible by the computer system, wherein the replets that represent respective parts of said sequence data;

means for storing in a memory accessible by the computer system, for each replet, at least one a-position-match entry that records the a respective at least one data positions of the replet within the sequence data; information over which the identified replet matches the sequence information;

means for determining generating a backbone data sequence, wherein generating the backbone data sequence includes removing the replets from the sequence data; - information for which no replet match is identified; and

means for representing presenting the multisequence data as the backbone sequence data in combination with the position-match entries.